the refuse dumps and other breeding sites are sprayed with DDT preparations at intervals between May and October.

LICE. Infestation with lice is common among the inhabitants in the congested quarters of the towns and in the villages and the Bedouin encampments. *Pediculus humanus corporis* is important as the vector of typhus fever; cases are reported almost annually. *P. humanus capitis* and *Phthirus pubis* are somewhat less frequent.

FLEAS. Numerous species of fleas parasitize the wild and the domestic rodents. The rat flea, *Xenopsylla cheopis*, is prevalent: it is the vector in sporadic cases of murine typhus, and in past decades it was implicated in the transmission of plague. The human flea, *Pulex irritans*, and the cat and the dog fleas, *Ctenocephalides felis* and *C. canis*, are widely distributed. The sticktight flea, *Echidnophaga gallinacea*, sometimes attacks man, but it is of no known medical significance.

BEDBUGS. *Cimex lectularius* is an annoying pest in all parts of the country.

TICKS AND MITES. A variety of ticks, including *Rhipicephalus sanguineus* and several species of *Hyalomma*, infest the livestock. *Ornithodorus tholozani* is found in the rural areas, where it is the local vector of tick-borne relapsing fever.

The grain itch mite, *Pediculoides ventricosus*, is plentiful in the grain-producing regions. It frequently attacks man, causing a painful rash. The human itch mite, *Sarcoptes scabiei*, is widely distributed, but it is decreasing steadily in prevalence.

SCORPIONS AND SPIDERS. Several species of scorpions are present, including *Buthus quinquestriatus*, *B. judaicus*, *B. crassicauda* and *B. europeus*, and *Scorpio maurus propinquus* and *S. maurus fucus*. Serious systemic effects resulting from scorpion stings are rare, but deaths are sometimes recorded among young children, usually after attacks by *B. quinquestriatus*.

The poisonous black spider, *Latrodectus tredecimguttatus*, is found in some localities.

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Reptiles. Venomous snakes are not common, but at least 4 species of vipers are known to be present. The carpet viper, *Echis carinatus*, exists only in the north, while *Vipera lebetina lebetina*, *V. lebetina xanthina* and *V. palaestina* are reported from many parts of the country. 126

Rodents. Rats and mice are numerous. The usual domestic rats are *Rattus rattus rattus* or *R. rattus alexandrinus*. *R. norvegicus* sometimes invades the port towns of Latakia.

Molluscs.* The fresh-water snail, *Bulinus truncatus* (— *B. contortus*), inhabits some of the tributaries of the Belikh and the Khabour rivers, near the Turkish border. It is the intermediate host of *Schistosoma haematobium*, which is reported from several foci in that region. 136 164

Plants. Various trees, weeds and grasses are capable of inducing allergic manifestations in susceptible individuals, but no precise information is available. 137 152

The broad bean, *Vicia faba*, which is grown extensively as a food, may be toxic to young children when it is eaten raw. A few deaths are observed each year, among children in both urban and rural communities. Occasional cases of lathyrism occur when the "Indian pea," *Lathyrus sativus*, a plant widely cultivated for fodder, is used for human consumption. [135]

Food Sanitation

Municipal regulations govern the sanitation of the food supplies in the cities of Damascus, Aleppo, Homs, Hama and Latakia. Restaurants, markets and other premises where food is sold are inspected at regular intervals by the municipal sanitary officers, and food handlers are required to register for examination at 6-month intervals. Municipal slaughterhouses are established in towns with populations of 20,000 and over, and are operated under the supervision of the health authorities. The meat animals are inspected before and after slaughter by veterinary officers of the Min- 144

* See footnote, page 10.

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164 563 Ahwites and 68 per cent among the Ismailites. Trachoma is one of the principal causes of blindness, in spite of the fact that, in the opinion of many local observers, a large percentage of uncomplicated cases exhibit a tendency to spontaneous cure.

164 Gonococcal and other types of infectious conjunctivitis are common. In a series of 315 conjunctival examinations, reported in 1931,[18] from the mission hospital at Deir ez Zor, *Hemophilus lacunatus* (Morax-Axenfeld bacillus) was identified in 34 per cent, *H. conjunctivitidis* (Koch-Weeks bacillus) in about 10 per cent and *Neisseria gonorrhoeae* in 5 per cent, while different pyogenic cocci were found in the remainder.

164 515 758 Diseases of the Skin. As is to be expected, in view of the widespread ignorance of the principles of personal hygiene and the scarcity of water in many areas, skin diseases are prevalent. They represented almost 10 per cent of the total cases treated in government hospitals and clinics in 1949.

164 361 511 Mycotic infections are numerous, with ringworm of the scalp predominating in most localities. Impetigo and scabies are widespread, particularly among children in the rural villages. Pediculosis is almost universal among the inhabitants of the poorer, congested communities, both urban and rural. Occasional cases of human myiasis are encountered. A form of dermatitis, caused by the bite of *Phlebotomus papatasii* and other sandflies, is sometimes encountered among susceptible individuals in the summer months.

164 Leprosy. Endemic foci of leprosy exist in various parts of the country, but primarily in Hauran and Latakia provinces. The extent of infection is not accurately known, and estimates of prevalence range from 90 to 250 cases. A few new cases are reported each year. Theoretically, isolation [143] is compulsory, and the Ministry of Health maintains a leprosarium at Douma, near Damascus, which has facilities for the care of about 75 lepers.

752 164 Rabies. Sporadic cases of rabies are reported. The majority result from the bites

752 164 of rabid dogs, but wolves, hyenas, jackals, rats and other animals are sometimes implicated. 754 753 164 Prophylactic treatment is provided by the Ministry, and a special division for the preparation of antirabic vaccines is incorporated in the central laboratory in Damascus. From 140 to 250 persons were treated annually in the 4 years 1948-51.

164 232 **Other Infections.** Tetanus is endemic, and occasional cases are observed. Anthrax is enzootic among the sheep, and human infections sometimes occur in the agricultural areas. Sporadic cases of Weil's disease are reported.

Diseases Spread by Arthropods

164 **Malaria.** Malaria is a disease of major public health and economic importance, since it is endemic or hyperendemic in all populous sections of the country. The prevalence of the disease is directly related not only to the physical geography of the different regions, but to the degree and the type of cultivation. The most seriously affected foci are the plains around Damascus and Aleppo, the Orontes valley from Hama to the Turkish frontier, the irrigated zones bordering the Belikh and the Khabour rivers and their tributaries, and the swampy districts of Hauran province. Universally high infection rates are experienced during epidemic years, even in areas of low endemicity.

659 164 744 No large-scale surveys have been attempted, but accumulated studies provide rough estimates of the extent of infection in localized areas. Prior to the development of a program for the control of malaria by the Ministry of Health and the Near East Foundation in 1949-50, the spleen index among children under 10 years of age in the villages around Damascus ranged from 40 to 80 per cent, with the highest rates in villages on the periphery of the Outaybeh swamps in the eastern part of the oasis. In the vicinity of Homs, the spleen rates normally average 50 to 70 per cent.

659 747 In the course of joint surveys made by the malariologists of the United Nations